

# WATER QUALITY M E M O R A N D U M

## Utah Coal Regulatory Program

---

August 15, 2011

TO: Internal File

THRU: Daron Haddock, Coal Program Manager *DRH*

FROM: April A. Abate, Environmental Scientist III *AAA 8/15/2011*

RE: 2011 First Quarter Water Monitoring, Plateau Mining Corporation (PMC), Willow Creek Mine, C/007/0038, WQ11-01, Task ID #3767

The Willow Creek Mine is in reclamation. The mines have been closed and sealed. The disturbed areas around the portals have been regraded and seeded. The most recent surface operations took place in Willow Creek Canyon, about a mile from the junction between U.S. Highway 6 and State Highway 191. The reclaimed area in Crandall Canyon is part of the Willow Creek permit area received Phase I Bond Release approval from the Division. The MRP requires that all surface water sampling be conducted up through Phase II Bond Release.

There are no ground water sites monitored during the reclamation phase.

1. Were data submitted for all of the MRP required sites? YES ☒ NO ☐

Under the reclamation plan, surface water monitoring is required for sites listed on Table 4.7-2 and shown on Map 15.

**Springs-** There are no springs monitored during the reclamation phase.

**Streams-** There are six surface water-monitoring sites:  
B3N (Willow Creek above power plant),  
B-5 (Price River below processing plant above Willow Creek),  
B-6 (Price River above coal processing plant),  
B25 (Crandall Canyon Creek),  
B26 (lower reach of Crandall Canyon)  
B151 (Willow Creek – 3 miles above Willow Creek Mine)

The reclamation sampling water quality list is presented in Section 13, p. 28. Sampling is conducted quarterly. PMC tries to monitor the sites within a two week period from March 15<sup>th</sup>, June 10<sup>th</sup>, September 5<sup>th</sup> and November 30<sup>th</sup> to attempt to collect data that coincides with first thaw, spring high flow, end of summer low-flow and last sample before

**WATER QUALITY MEMO**

freeze-up.

All required stream sampling locations were monitored for the quarter on March 16, 2011. Crandall Canyon Creek samples B-25 and B-26 were inaccessible due to the snow.

**Wells-** There are no operational monitoring wells.

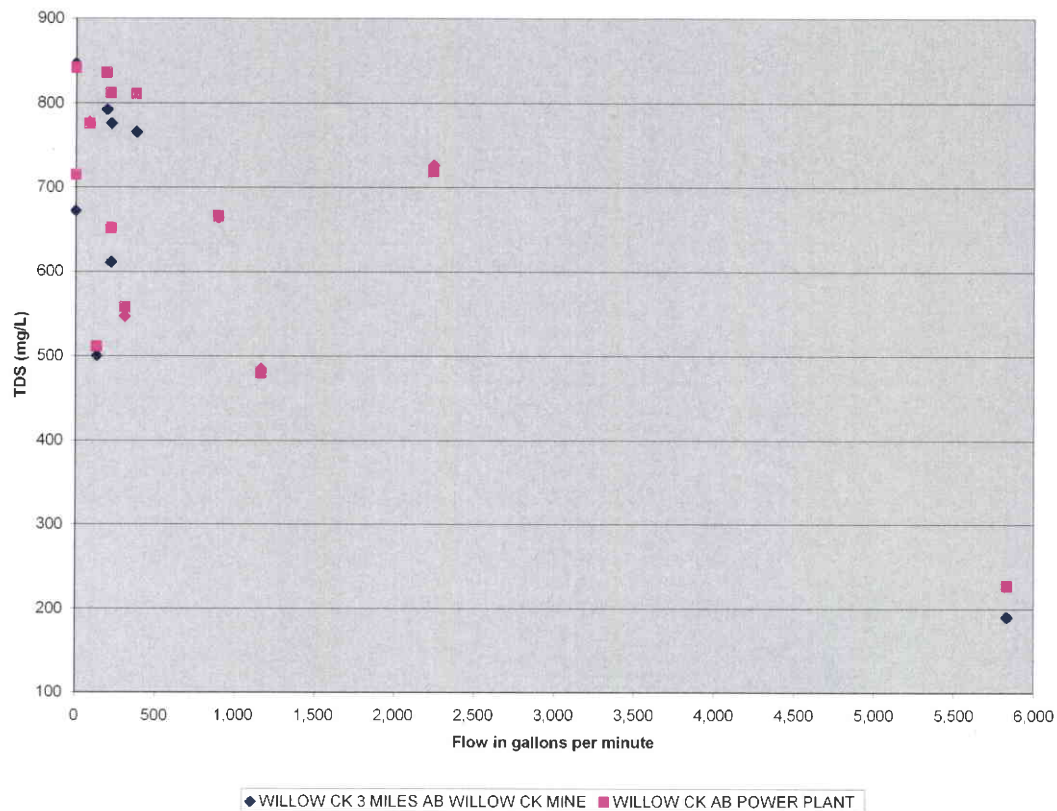
**UPDES-** The mine has been reclaimed and as a result, there are no currently active Utah Pollutant Discharge Elimination System (UPDES) monitoring locations at the site.

2. **Were all required parameters reported for each site?** YES ☒ NO ☐
3. **Were any irregularities found in the data?** YES ☒ NO ☐

Flows were exceedingly high (approximately 6,000 gallons per minute) in Willow Creek and therefore, constituents such as dissolved calcium, magnesium, sulfate and TDS were much lower than their average reported values. Total suspended solids values were expectedly much higher due to the high flow conditions.

In general, reliability checks for total dissolved solids (TDS) relative to measured conductivity show a TDS result remaining between 55 – 75% of the conductivity value. Given the abnormal flow rates during the winter quarter 2011 at the Willow Creek monitoring stations, reliability checks for TDS values were not reviewed. The scatter plot below demonstrates the TDS concentrations in stream samples located 3 miles above the former Willow Creek mine and a stream sample below the former Willow Creek mine portals. As can be seen on the chart, TDS concentrations are highest when flow rates range between 0 to 500 gallons per minute. TDS rates dropped significantly during a reported flow rate of approximately 5,834 in March 2011.

## WATER QUALITY MEMO



TDS standards for this reach of the Price River Watershed are set at 1,700 mg/L based on the Utah Administrative Code Rule R317-2. Stream samples collected continue to remain well below this standard.

**4. On what date does the MRP require a five-year resampling of baseline water data.**

Baseline data were collected at the beginning of mining operations for a two-year period; however, routine 5-year sampling is not specified in MRP. The Division recommends baseline water quality parameter sampling at each five-year renewal period.

**5. Based on your review, what further actions, if any, do you recommend?**

The Permittee may wish to consider removing Crandall Canyon B-25 and B-26 samples from 1<sup>st</sup> quarter sampling requirements due to accessibilities issues during the winter months. Reporting of these data during 1<sup>st</sup> quarter would no longer be required. A minor amendment change to the water monitoring plan in the MRP would accomplish this.